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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,181

06/29/2006

Hiromasa Shoji

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EXAMINER

CHAU, LISA N

ART UNIT

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1794

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,181	Applicant(s) SHOJI ET AL.	
	Examiner Lisa Chau	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pub. No. 20020155710 ("Okamura et al.") in view of US Pub. No. 20030042042 ("Jo et al.").

With regards to Claims 1, 5, 6, 7, and 11, Okamura et al. teaches a HDD suspension having a stainless steel substrate (1), an insulating resin layer (2) made of heat resistant polyimide resin [0015], and a metal foil (3) (Abstract and Fig. 1). Okamura et al. further teaches that it is allowable to apply chemical or mechanical surface treatment (covering layer) to the stainless steel substrate for improving the adhesive strength [0014].

Okamura et al. does not explicitly teach that the surface treatment (covering layer) made chiefly of either one or both of a metal oxide and a metal hydroxide with chromium excluded as the metal species.

However, Jo et al. teaches an adhesive layer (covering layer) having an adhesive composition of metal hydroxide with cracks [0027], where the metal species is Titanium (Abstract) in its flexible printed board having stainless steel plates, a plastic/insulating film made of polyimide and a metal foil (Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to insert Jo et al.'s adhesive layer (covering layer) into Okamura et al.'s invention to improve adhesive strength of the insulating resin layer to the stainless steel substrate.

With regards to Claim 2, Okamura et al. nor Jo et al. teaches its covering/adhesive layer having an average thickness of not larger than 5 μm .

However, the Examiner deems that it would have been obvious to one having ordinary skill in the art to have determined the optimum value of a results effective variable such as the overall thickness of the covering/adhesive layer through routine experimentation. In re Boesch, 205 USPQ 215 (CCPA 1980); In re Geisler, 116 F. 3d 1465, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997); In re After, 220 F.2d, 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the covering/adhesive layer having an average thickness of not larger than 5 μm , since the thickness of a layer is a known

results effective variable and one would have chosen an optimal thickness to improve the adhesive strength between layers.

With regards to Claim 3, Okamura et al. does not teach its chemical or mechanical surface treatment (covering layer) covering the stainless steel substrate at a covering ratio of not smaller than 10%.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention was made that Okamura et al.'s chemical or mechanical surface treatment (covering layer) to the stainless steel substrate was covering more than 10%, because one in the art would have wanted to completely cover the whole stainless steel substrate so that any layers subsequently on it, all parts of that layer would adhere to the stainless steel substrate and form a strong bondage.

With regards to Claim 4, the limitation "wherein said covering layer is distributed like islands on the stainless steel foil", even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.", (In re Thorpe, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious

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different between the claimed product and the prior art product (In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113).

With regard to Claim 8, Okamura et al. teaches the claimed limitation (Abstract).

With regards to Claim 9, Okamura et al. teaches the stainless steel substrate having a thickness preferably in the range of 10-70 μm , more preferably 15-30 μm [0012].

With regards to Claim 10, Okamura et al. teaches the thickness of the insulating resin layer to be 0.5-7 μm [0019].

With regards to Claim 12, Okamura et al. teaches the heat-resistant polyimide resin layer has a three-layer structure of polyimide (B)/polyimide (A)/polyimide (B), wherein polyimide (A) is a layer of low-thermal expansion ([0016] and [0018]).

With regards to Claim 13, Okamura et al. teaches the heat-resistant polyimide resin layer having a coefficient of linear expansion of $30 \times 10^{-6}/^{\circ}\text{C}$, meeting the instant claim of Applicants [0035].

With regards to Claim 14-18, Okamura et al. teaches a surface treated copper metal foil laminated on said insulating resin layer [0013-0014]. Okamura et al. further teaches the adhering force between said copper metal foil and the insulating resin layer is 0.5 kN/m or more [0022].

With regards to Claims 19 and 20, Okamura et al. teaches its HDD suspension for a load beam and flexure [0047].

4. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

US Pub. No. 20040105989 ("Ohta et al.")

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa Chau whose telephone number is (571)270-5496. The examiner can normally be reached on Monday-Thursday 8 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Holly Rickman/
Primary Examiner, Art Unit 1794
For Lisa Chau

/LC/